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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/638,980	08/12/2003	Yuri Goldstein	PCTEL-021	7133

36822 7590 03/28/2007
GORDON & JACOBSON, P.C.
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STAMFORD, CT 06902

EXAMINER

FILE, ERIN M

ART UNIT	PAPER NUMBER
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2611

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/28/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/638,980

Applicant(s)

GOLDSTEIN ET AL.

Examiner

Erin M. File

Art Unit

2611

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 January 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application
- ☐ Other: _____

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1, 2, 12, 13, and 15 have been considered but are moot in view of the new ground(s) of rejection.
2. In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 2611

4. Claims 1, 12, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Isaksen et al. (U.S. Patent No. 6,904,098) in view of Ekvetchavit et al. (U.S. Patent No. 2002/0159551).

Claims 1, 12, Isaksen discloses:

- receiving the multicarrier wireless telecommunications data signal without accompanying pilot signals (the method explain by figure 9 is using a blind equalization mode, therefore, no pilot is use in the wireless communication data signal, step 236, column 12, lines 23-28);
- extracting information from the multicarrier wireless telecommunications data signal (the averaged phase error signal obtain in step 244 in figure 9, column 12, lines 42-44);
- processing said information in order to obtain equalization indications (see col. 2, lines 53-56, by using a complex multiplier to insert an inverse of the averaged phase angle error signal into the QAM Blind equalized signal to compensate for the carrier phase angle error, also see fig. 9, 246);
- equalizing said multicarrier wireless telecommunications data signal by modifying indications of said wireless telecommunications data signal using said equalization indications (see col. 2, lines 53-56, by using a complex multiplier to insert an inverse of the averaged phase angle error signal into the QAM Blind equalized signal to compensate for the carrier phase angle error, also see fig. 9, 246).

Art Unit: 2611

Isaksen fails to disclose a multicarrier wireless telecommunications data signal carried by at least three carriers, however, Ekvetchavit discloses multicarrier wireless telecommunications data signal carried by at least three carriers (abstract, lines 9-10). Because Ekvetchavit discloses his system is an efficient filter for extracting data from such a multicarrier signal (title, abstract, lines 1-5). Because of this advantage, it would have been obvious to one skilled in the art at the time of invention to incorporate the three carrier system as disclosed by Ekvetchavit into the invention of Isaksen.

Claim 15, Isaksen discloses:

- a first telecommunications apparatus including a transmitter which transmits a wireless telecommunications data signal without accompanying pilot signals (col. 2, lines 34-35, 38-39);
- a second telecommunications apparatus including a receiver which receives said wireless telecommunications data signal, said receiver including an equalizer(col. 2, lines 34-35),
- said equalizer including means for extracting information from the multicarrier wireless telecommunications data signal (see col. 2, lines 53-56, by using a complex multiplier to insert an inverse of the averaged phase angle error signal into the QAM Blind equalized signal to compensate for the carrier phase angle error, also see fig. 9, 246)
- processing said information in order to obtain equalization indications, and for equalizing said multicarrier wireless telecommunications data signal by modifying indications of said wireless telecommunications data signal using said

equalization indications (see col. 2, lines 53-56, by using a complex multiplier to insert an inverse of the averaged phase angle error signal into the QAM Blind equalized signal to compensate for the carrier phase angle error, also see fig. 9, 246).

Isaksen fails to disclose a multicarrier wireless telecommunications data signal carried by at least three carriers, however, Ekvetchavit discloses multicarrier wireless telecommunications data signal carried by at least three carriers (abstract, lines 9-10). Because Ekvetchavit discloses his system is an efficient filter for extracting data from such a multicarrier signal (title, abstract, lines 1-5). Because of this advantage, it would have been obvious to one skilled in the art at the time of invention to incorporate the three carrier system as disclosed by Ekvetchavit into the invention of Isaksen.

5. Claims 2 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Isaksen et al. (U.S. Patent No. 6,904,098) and Ekvetchavit et al. (U.S. Patent No. 2002/0159551) as applied to claims 1 and 12 above, and further in view of Gardner (U.S. Pub. No. 2004/0125740).

Claims 2, 13, neither Isaksen nor Ekvetchavit disclose said information extracted from the wireless telecommunications data signal is per-carrier phase and amplitude adjustment information, however, Gardner discloses extracting from the wireless telecommunications data signal per-carrier phase and amplitude adjustment information ([0051], lines 15-18). Gardner further discloses that these values are used for eliminating unwanted sidelobes in the signal (abstract, line 9). Because of this

Art Unit: 2611

advantage, it would have been obvious to one skilled in the art at the time of invention to incorporate the per carrier phase and amplitude adjustment information as disclosed by Gardner into the combined invention of Isaksen and Ekvetchavit.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

7.

8. Claims 1-15 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Independent Claims 1, 12, and 15 recite a data signal carried by at least three carriers as amended. However, this claim is not supported by the original specification as submitted. Therefore the claims as amended are not enabled by the specification.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Erin M. File whose telephone number is (571)272-6040. The examiner can normally be reached on M-F 1:00PM-9:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Payne can be reached on (571)272-3024. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

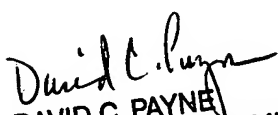
Art Unit: 2611

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Erin M. File

EMF

3/19/2007


DAVID C. PAYNE
SUPERVISORY PATENT EXAMINER